TECHNICAL BOOK REVIEW INDEX

Published monthly, except July and August, by Special Libraries Association. Second class postage paid at Pittsburgh, Pennsylvania. Compiled and edited in the Technology Department, Carnegie Library of Pittsburgh, 4400 Forbes Ave., Pittsburgh 13, Pa. Subscriptions, renewals, and orders for back numbers should be sent to Special Libraries Association, 4400 Forbes Ave., Pittsburgh 13, Pa., or 31 East Tenth St., New York 3, N. Y. Price $7.50 a year in the United States; $8 elsewhere.

ANTHONY A. MARTIN, *Editor*

Volume 27 **February, 1961** **No. 2**

THE purpose of the Technical Book Review Index is primarily to identify reviews in current scientific, technical, and trade journals; secondarily, when feasible, to quote from these reviews. In the evaluation of scientific and technical books, reviews constitute the best existing source of information. The service of the Technical Book Review Index is thus in the field of evaluation, rather than in competition with existing publications which announce new and forthcoming books, list books by subjects, or supply bibliographic information. Each quotation immediately follows the name of the journal from which it is taken. Obviously, these brief extracts, detached from the context, must not be accepted as conclusive. Except for the correction of obvious errors, the bibliographic information is as given in the reviews. It is, therefore, in many cases incomplete and in some cases probably inaccurate.

Abraham, Herbert.

Asphalts and allied substances. Ed.6. v.1. 370p. 1960. Van Nostrand, Princeton, N. J., $10.75.

Oil and gas journal, Dec. 19, 1960, p.85. 11 l.

"Written for those interested in the fabrication, merchandising, and application of bituminous products. Included is a brief historical review along with terminology, classification and the chemistry of bituminous substances, and extensive coverage of the natural raw materials. The geographic locations of known asphalt deposits throughout the world are listed and methods of mining, transporting, refining, and storing them are outlined."

Adamson, Arthur W.

Physical chemistry of surfaces. 629p. 1960. Interscience Publishers, New York, $12.75.

American dyestuff reporter, Dec. 26, 1960, p.30. ⅜ col.

"A guide to the important contemporary work that can serve as a point of departure for the investigator and scientist . . . Its early chapters are accompanied by exercises to test and strengthen the reader's understanding of the fundamentals in the field. Each chapter is well illustrated and is accompanied by adequate references to the literature. Physical and chemical adsorption, wetting, flotation, detergency, emulsions, and foams are some of the topics that are treated . . . A welcome addition to the literature of this rapidly growing field of investigation."

Chemical & engineering news, Jan. 9, 1961, p.58. 1½ col.

"A superb and urgently needed textbook . . . The writing is generally marked by its lucid style . . . Dwells on the development of concepts, as a textbook should, and the figures and tables are numerous and clear . . . Aimed at first year graduate students. Nevertheless, professional chemists will find it exceedingly useful. Not only are there elaborate textual references to the discussion, but there are also listings of the important books as general references at the end of most chapters . . . Virtually certain to be a vital force in education and professional circles as surface chemistry comes of age. Adamson is to be congratulated for the service he has rendered." *A. C. Zettlemoyer.*

American Foundrymen's Society, Incorporated.

Patternmaker's manual. 1960. The Society, Des Plaines, Ill., $9.50.

Foundry trade journal, Dec. 22, 1960, p.807. ½ col.

"Until the ninth chapter had been reached the reviewer found this book rather 'the same old story' . . . From then onwards—through a total of 25 chapters—came a galaxy of information on planning and design of practically all classes of pattern equipment, from core dryers to permanent moulds. Undoubtedly this publication is a necessity to every progressive patternmaker and represents a very good 'buy' for every foundryman, too! Apprentices and students will find many explanations of matters puzzling to those new to the foundry industry—and probably at times also to more experienced operators." *B. Levy.*

American Society of Mechanical Engineers.

Pressure vessel and piping design. 700p. 1960. The Society, New York, $10.

Welding engineer, Jan. 1961, p.26. ⅛ col.

"This collection of fundamental information for boiler, pressure vessel and piping system designers was compiled from technical papers and reports published between 1927 and 1959. Sections deal with openings, bolted-flanged joints, heads, shells, piping, materials and fabrication, thermal stress and fatigue, loads and supports, external pressure and miscellaneous topics . . . Intended to be helpful to designers, but it is not to be construed as a supplemental requirement to the Society Codes."

Andersen, Paul, & **Nordby,** G. M.
Introduction to structural mechanics. 340p. 1960. Ronald, New York, $9.50.
Midwest engineer, Dec. 1960, p.18. ½ col.
"Develops a sound basis for the solution of the structural problems which the engineer encounters in practice. The basic theory is applied not only to traditional structures, such as roof trusses and bridges, but also to aircraft structures and machine design . . . Develops theory largely through practical design problems. Emphasis is placed upon understanding the stability of a truss. Methods of analysis are presented for simple, compound, and complex trusses. The concept of the influence line is introduced and discussed . . . The effects of moving loads on structures are also included. Each chapter covers a specific subject which adds to the continuity of the text in the event a chapter is skipped." *W. L. R.*

Anderson, Emerson.
Electronic organ handbook. 272p. 1960. Sams, Indianapolis, $4.95 unbound.
Electronics world, Feb. 1961, p.86. 9 l.
"Written for technicians as well as owners or potential owners of electronic organs who want to know more about these instruments, this book covers fundamentals and provides descriptions of organ models made by eight manufacturers. Over 140 illustrations, schematics, and diagrams complement the comprehensive text."

Ankenbrandt, F. L., ed.
Electronic maintainability. v.3. 312p. 1960. Engineering Publishers, P. O. Box 2, Elizabeth, N. J., $10.
Electronic industries, Jan. 1961, p.62. ¼ col.
"Maintainability has a direct bearing on the usefulness of any product, whether it be complex electronic gear in a satellite or guided missile, a huge electrical generator, or milady's hair dryer. This book . . . contains an authoritative discussion of the developments which have been changing maintainability from the vaguely practiced art of yesterday to the rigorous science of today and tomorrow. Many aspects of modern maintainability are discussed in depth."
Product engineering, Jan. 9, 1961, p.89. 10 l.
"Based on the Third Electronic Industries Assn Conference on Maintainability of Electronic Equipment. Subject matter ranges from the maintenance problems of space flight to the determination of adequate working space for electronics technicians. The contributors are among the foremost workers in the field."

Appleyard, H. M.
Guide to the identification of animal fibres. 118p. 1960. Wool Industries Research Assoc., Leeds, England, 42s.
Journal of the Society of Dyers and Colourists, Dec. 1960, p.686. ⅗ col.
"Compiled because the use of an ever-widening range of fibres in textiles and other products, in particular furs and brushes, has increased the need for a wide knowledge of the morphology of animal fibres. Fibres from 44 different species of mammals are described; most are used in the textile industry, some for novelty effects. The nomenclature used is that of *The Microscopy of Animal Textile Fibres* by A. B. Wildman, published by the Association in 1954 . . . Should be of great assistance in the investigation of problems arising in the textile industry; it should also be of value to the forensic scientist and the archaeologist." *M. T.*

Asimov, Isaac.
Intelligent man's guide to science. 2v. 853p. 1960. Basic Bks., New York, $15.
Science, Dec. 16, 1960, p.1830. 1 col.
"Here, at last, is something new in popular science writing . . . The main body of each volume . . . gives the most up-to-date, the most exciting, and the most readable general account of the spur heads of modern science. I would recommend these volumes above any other popular book and above many conventional texts as being suitable for anyone, from high-school age onward, who wants to understand those parts of science where man's heaviest intellectual artillery is being deployed." *Derek J. de Solla Price.*

Bassin, Milton G., & **Brodsky,** S. M.
Statics and strength of materials. Ed.3. 345p. 1960. McGraw, New York, $7.
American machinist/metalworking magazine, Dec. 12, 1960, p.231. ⅓ col.
"Strength of materials without calculus, on a junior-college or extension-course level, should also be useful in the shop—and for refreshing engineers who need a light brushup . . . Strong on definitions, and . . . suitable for anyone with a high-school background. The text is based on Leigh & Mangold's 'Practical Mechanics and Strength of Materials,' but has been rewritten and equipped with new tables, drawings, and many new problems—with answers to some." *C. D. E.*
Machine design, Jan. 5, 1961, p.188. ⅛ col.
"Fundamental principles of mechanics and strength of materials are covered. Such topics as forces, moments, friction, centroids, inertia, and combined stresses are discussed. Calculus is not required to gain understanding of this material . . . Text material is supported by 134 solutions of sample problems, about 500 new figures, and new and revised supplementary problems. A list of formulas has been included for convenient reference."

Blyth, F. G. H.
Geology for engineers. Ed.4. 341p. 1960. E. Arnold, London, 30s.
Mining engineer, Dec. 1960, p.159. 1 col.
"The general plan . . . remains unchanged, the chapters following one another in an admirable logical sequence, but many sections of chapters have been revised or brought up to date, or sometimes entirely re-written . . . The result of the additions and alterations is to render what was already an attractive book more useful and accurate, and the author and the publishers are to be congratulated . . . Despite the author's valiant efforts, quite a number of inaccurate and sometimes misleading statements have been perpetuated in the new edition . . . They do not, however, really detract from the real value of the book, which should be a useful introduction to the subject for many years to come." *F. Wolverson Cope.*

Boehm, George A. W.

New world of mathematics. 128p. 1960. Faber, London, 10s. 6d.

Discovery, Dec. 1960, p.548. ⅔ col.

"Feeling it to be a matter of public importance to convey the new feeling of mathematics to its nation-wide readers, the Editors of *Fortune* magazine and George Boehm consulted over eighty of the leading mathematicians of the U.S.A. and produced a remarkable series of magazine articles. These have now been expanded into a book . . . It is a pity that the extensive work of preparation was not better used when the articles were expanded to book form. With adequate footnotes and references to original sources, the more serious reader could have followed up the many interesting openings, and teachers who wish to keep their teaching up to date would have found an invaluable companion. As it is, these opportunities have been largely missed." *T. J. Fletcher.*

Born, J.

Praktische Schalenstatik v.1. 1960. Ernst, Berlin, DM 50.

Concrete and constructional engineering, Dec. 1960, p.432. ⅔ col.

"The membrane theory is described from first principles and the methods of calculation are derived for shells of cylindrical, conical and spherical shapes. Although the book . . . deals exhaustively with the mathematics of this type of shell structure, only a small portion of the analysis appears to have practical significance. This disadvantage may be overcome in the second volume."

Buckingham, Earle, & **Ryffel,** H. H.

Design of worm and spiral gears. 464p. 1960. Industrial Press, New York, $15.

Machinery (New York), Jan. 1961, p.138. 1⅛ col.

"Does not present the conventional practices for the design of worm-gear drives; these are already covered in a variety of texts on machine design, handbooks, and the catalogues of gear manufacturers. The aim of the authors has been to show how to obtain the benefits of improved design in spiral gears (crossed-axis helical gears) and worm drives through the use of all-recess-action design principles. The book does two jobs: (1) It provides a step-by-step guide to the design of worm- and spiral-gear drives with all-recess action, and (2) it presents certain basic principles and practices which enter into the successful design and manufacture of gears and gear drives of all kinds."

Cadoff, Irving B., & **Miller,** E., ed.

Thermoelectric materials and devices. 344p. 1960. Reinhold, New York, $9.75.

Electronic industries, Dec. 1960, p.56. ⅔ col.

"An authoritative survey of recent progress made in the development of new materials for thermoelectric devices. Based on a special series of lectures presented at New York University, the book features contributions of 20 experts and ranges from basic theory to device design. The first section is devoted to the theory of thermoelectric processes and thermoelectric circuits. This is followed by a general evaluation of materials . . . for use as thermoelements. The ensuing chapters discuss materials currently being used and those being considered for future use. The last section . . . concerns the principles of device design and descriptions of some experimental and prototype units which have been built and evaluated."

Materials in design engineering, Dec. 1960, p.155. ¼ col.

"Divided into four sections: 1) theory of thermoelectric processes and circuits; 2) evaluation of materials; 3) materials currently being used and those being considered for future use; and 4) principles of thermoelectric device design, including descriptions of some experimental and prototype units . . . Should be of value to metallurgists, electrical and electronics engineers, and physicists."

Carroll-Porczynski, C. Z.

Manual of man-made fibres. 340p. 1960. Astex Pub. Co., Guildford, England, 29s.

British plastics, Dec. 1960, p.597. 1 col.

"In the preface . . . the writer indicates that he has attempted to present the manufacture and properties of man-made fibres in condensed but effective form by designing flow sheets, tables of physical and chemical properties, stress-strain diagrams of tensile properties of the fibres in the dry, wet and heated states. This truly describes the nature of the book . . . Essentially a manual for quick reference, with only a limited amount of descriptive matter, with the material in tables and other tabular form, with microphotographs and bibliography . . . As is not unexpected in a first edition, there are some errors which will doubtless be corrected later . . . When there has been some tidying up, the book should be very useful as a reference book." *C. Diamond.*

Carter, Ernest Frank.

Hydro-electric power. 142p. 1960. Muller, London, 9s. 6d.

Power & works engineering, Dec. 1960, p.998. ⅛ col.

"The author tells the fascinating story of water-power evolution from the Roman water-wheel to the immense 80,000 h.p. turbines of today. He describes, in simple language, how men have learnt to harness water and to turn this source of natural energy to good use, and shows how many of the comforts of modern civilisation can be achieved with the help of the power of falling water."

Casey, James P.

Pulp and paper chemistry and chemical technology. Ed.2. 3v. v.1. 674p. 1960. Interscience Publishers, New York, $19.50.

Tappi, Dec. 1960, p.150 A. ½ col.

"A complete revision with special emphasis on the fundamental advances in science and technology, and with appropriate attention given to recent developments in manufacturing operations. Many of the chapters have been enlarged . . . Subjects covered by volume I are cellulose and hemicellulose, lignin, pulpwood, pulping (of all kinds), and bleaching . . . Dr. Casey received many tributes for his accomplishment in bringing out the first edition and might have rested on his laurels. However, he . . . has committed himself to keeping these

useful and well-written texts up to date. In so doing he is making an excellent contribution to the pulp and paper industry."

Chapman, Alan Jesse.
Heat transfer. 452p. 1960. Macmillan, New York, $9.

Heating, Dec. 1960, p.437. ½ col.

"Written to fulfil a need for a textbook in the field of heat transfer which presents a fundamental approach in a suitably rigorous manner. The basic laws of conduction, convection and radiation are treated fundamentally and elaborated. Convective heat transfer is extensively treated to show how the basic principles of thermodynamics, fluid dynamics, and applied mathematics can be brought together to analyse physical convection phenomena. Since the analysis of convective heat transfer involves the combination of powerful analytical tools with extensive experimental results, the importance of dimensional analysis in the determination of valuable empirical relations is also demonstrated."

Christ, George J.
Tubes and circuits. 192p. 1960. Gernsback, New York, $3.45 unbound.

Design news, Dec. 19, 1960, p.68. ⅖ col.

"A sound understanding of the theory behind electron tubes and the circuits in which they are used will enable the practical technician to do a more efficient and intelligent job. With this in mind, George J. Christ offers a clear understanding of the basic components of even the most complex circuit, explaining in lucid detail the theory of electronic vacuum-tube characteristics and applications, vacuum-tube amplifiers and oscillators, photoelectric emission and industrial-tube applications."

Chuse, Robert.
Unfired pressure vessels. E.4, revised and enlarged. 154p. 1960. Dodge, New York, $8.75.

Iron and steel engineer, Dec. 1960, p.278. ¼ col.

"Updated to include current requirements of Section VIII Rules for Construction of Unfired Pressure Vessels and Section IX on Welding Qualifications of the ASME Boiler and Pressure Vessel Code; it simplifies ASME code requirements for pressure vessels . . . Presented in an easy-to-understand manner and contains useful information to evaluate ASME code design . . . Includes 66 tables, charts and diagrams, enabling quick, accurate calculations for designing, ordering, fabricating, inspecting and repairing unfired pressure vessels."

Welding engineer, Jan. 1961, p.27. ⅓ col.

"Not a text-book, but a practical guide for consulting mechanical, chemical and design engineers, and for fabricators, inspectors, shop supervisors and users of Code vessels, this book by a WE contributor recounts the ASME Code history, outlines procedures for obtaining Code authorization, presents Canadian pressure vessel requirements, indicates necessary welded repair procedures and highlights such factors as work-flow schedules, mill orders, warehouse orders and shop organization."

Coates, G. E.
Organo-metallic compounds. Ed.2. 366p. 1960. Methuen, London, 45s.

Chemical age, Dec. 17, 1960, p.1031. ⅓ col.

"Thoroughly revised and expanded in length and format to cover the chemistry of the transition elements which has been a very active field of research in the last few years . . . The best available discussion of the fashionable and important subject of organo-metallic compounds. It is the right size and level for the honours student . . . Should be in all chemical libraries. It is to be hoped that the publishers reward for bringing the work out at a reasonable price will be additional large sales to individuals."

Critchfield, Howard J.
General climatology. 464p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $10.60.

Bulletin of the American Meteorological Society, Dec. 1960, p.706. 1 col.

"Intended as a survey text introducing climate to people of many walks of life. The aim is to give a thorough, yet non-mathematical, treatment of three topical divisions: physical, regional, and applied . . . The principal innovation . . . is the large applied part, entitled 'Weather, Climate, and Life.' Of the three parts, the physical elements have 165 pp, regional climate 80 pp, and the applied part 180 pp; this shows clearly the relative emphasis desired by the author . . . With . . . [some] reservation . . . the volume is recommended for serious consideration to instructors offering a terminal course in climatology. It should be added that there is an excellent index, that the drawings are numerous and well done, and that the manuscript has been carefully proofread." *Herbert Riehl.*

Cubicotti, D. See **Hiester,** N., & **Cubicotti,** D., ed.

Cutler, Phillip.
Electronic circuit analysis. 2v. v.1: Passive networks. 454p. 1960. McGraw, New York, $8.

Electrical design news, Dec. 1960, p.104. ¼ col.

"Contains many practical and easily understood descriptions of electronic circuits. While the contents . . . are certainly instructive and could be used by anyone working in the field, they would probably be best accepted in a basic class for electronics at the college level . . . Mr. Cutler has done an exceedingly good job in the preparation of examples throughout the book. These examples are compatible with current circuit design practices, and this in itself sets the book apart from many of the outdated texts used in some colleges."

Darmois, Eugéne, & **Darmois,** G.
Électrochimie theorique. 239p. 1960. Masson, Paris.

Talanta, Sept.-Oct. 1960, p.291. ½ p.

"Concerned entirely with the fundamentals and basic theory of electrochemisty in a broad sense of the term . . . The inclusion of so great a volume of material on so many diverse topics in so small a book has been achieved by keeping the written text to an absolute minimum and relying on simple diagrams and equations. For this reason it is easy to read . . . Should prove attractive to the student and to those who require to make reference

of the principles of the subject. Very little of a practical nature is included and the Chapter on analytical applications is too short and lacking in detail to be of real value. The binding is flimsy and the type too small for comfort, but it is otherwise an excellent and up-to-date book which is welcomed and can be recommended." *G. F. Reynolds.*

De Dani, A., ed.
Glass fibre reinforced plastics. 290p. 1960. Newnes, London, 50s.

Plastics Institute journal, Dec. 1960, p.J86. ⅜ col.

"The sixteen well-known contributors have each played an important part in the development of the industry, and what they have to say is both authoritative and clearly expressed . . . The first six chapters . . . deal with components of reinforced plastics, glass fibre reinforcements, resins and ancillary materials. These chapters are followed by a number describing moulding methods . . . There are, in addition, excellent chapters on jigs, tools, and finishing operations. The remaining chapters are devoted to the properties of laminates—most helpful to designers in glass reinforced plastics—and to subjects seldom discussed, namely the moulding shop and the laboratory . . . Altogether an admirable book for technicians and workshop personnel." *S. R. Badley.*

Dietz, A. G. H., & Eirich, F. R., ed.
High speed testing. v.1. 112p. 1960. Interscience Publishers, New York, $5.

Journal of the American Oil Chemists' Society, Dec. 1960, p.38. ⅜ col.

"Consists of an introduction and eight papers presented at a symposium devoted exclusively to a consideration of 'high-speed testing.' More specifically, the papers deal with equipment, instrumentation, test methods, and techniques used and with the interpretation of data obtained during the course of studies of the effects of rate of loading on the mechanical properties of a variety of materials, which include plastics, textiles, metals, solid fuels, and cushioning materials. Generally speaking, the contents . . . were obviously written by experts for experts in a rather highly-restricted field." *J. P. Hewlett.*

Draper, Charles S., and others.
Inertial guidance. 130p. 1960. Pergamon, New York, $6.50.

Electronic industries, Jan. 1961, p.62, 64. ½ col.

"The writing is directed at graduate-level engineering scientists . . . The book is tutorial, with the emphasis on the growth of engineering ideas in the field and the relationships of these concepts . . . Does not attempt to set up categories of systems except in a broad and general manner and it does not break inertial guidance efforts up into categories of activity. Rather, the underlying similarities and differences of various engineering approaches are discussed."

Machine design, Jan. 5, 1961, p.188. ⅛ col.

"A treatise on the physical principles and engineering methods underlying the navigation and control of vehicles solely by means of signals from sensors. These sensors depend only on the inertial properties of matter for their operation. Starting points are conventional navigation and Newtonian physics. Development proceeds from an examination of traditional navigation in terms of physics to interpretation of operations of navigation in terms of control theory. Problems include recent ballistic-missile guidance—where classification permits. Use of gyros in geometrical stabilization is given a unique treatment."

Drinberg, A. Ya., and others.
Technology of non-metallic coating; translated from the Russian by E. Bishop. 547p. 1960. Pergamon, New York, $15.

Journal of the Oil and Colour Chemists' Association, Dec. 1960, p.871. ⅞ p.

"Compiled with extreme thoroughness and attention to detail, and, although concerned with the use of paints rather than with their formulation and manufacture, it contains much information which is of interest . . . This book, apart from yielding much information on Soviet technology, offers considerable information, some of which is not easily available to the paint chemist. The translator has performed his task well, but could perhaps have employed less literal translations on one or two occasions . . . The majority of literature references are of Russian origin, and a number of these might well repay translation." *D. S. Newton.*

Journal of the Royal Institute of Chemistry, Dec. 1960, p.432. ¾ col.

"Since the original work was written for students of chemical engineering, its scope is wide, corrosion and the equipment used for application of coatings receiving thorough treatment . . . On account of this very wide coverage, all who are interested in non-metallic coatings will find some technical data in the text of which they were previously unaware . . . Thorough and fundamental in its treatment." *A. S. Freeborn.*

Duquesne, M., and others.
Travaux pratiques de physique nucléaire et de radiochimie. 324p. 1960. Masson, Paris.

CPE and atomic world, Dec. 1960, p.563. 1 col.

"Written for students of nuclear physics or chemistry of the Faculty of Sciences, Paris, and for others who wish to organise experimental courses . . . The first major part . . . is concerned with the detection and measurement of nuclear radiations . . . The second major part . . . deals with methods for the study of nuclear structure . . . A course based on the book should provide excellent experience. It is felt, however, that there are more suitable books for English-speaking students . . . A volume of such weight (25 oz.) should be provided with a stronger cover and its usefulness be enhanced by the provision of a comprehensive index." *D. F. C. Morris.*

Dyke, S. F.
Carbohydrates. 232p. 1960. Interscience Publishers, New York, $4.75. (Chemistry of natural products, v.5.)

Journal of the American Oil Chemists' Society, Dec. 1960, p.35. ¼ col.

"The low cost is particularly noteworthy and evidently results in part from the method of printing. The text appears on the left-hand

page only. On the right-hand page are structural formulas and equations which are generally reproduced from free-hand drawings . . . A concise introduction to carbohydrate chemistry . . . Although not of general interest to fat and oil chemists, this book would be a useful addition to the library of anyone who is concerned with the isolation and identification of carbohydrates in such lipid materials as the plant phosphatides." *Dorothy M. Rathmann.*

Edmunds, Francis Hereward.
Geology and ourselves. Ed.2. 256p. 1960. Hutchinson, London, 30s.

New scientist, Nov. 24, 1960, p.1408. 1⅛ col.

"Technical terms have been kept to a minimum, and when used their meaning is simply and unobtrustively incorporated. Illustrations, both line drawings and photographs, are well selected and produced. The style is smooth and rather informal, with incidental anecdotal illustrations. Altogether it is a very praiseworthy attempt to bring geology to a wide circle of non-technical readers . . . Can be strongly recommended as a gift to teen-agers, and to all those who are interested in one of the basic sciences." *S. E. Hollingworth.*

Eirich, F. R. See **Dietz,** A. G. H., & **Eirich,** F. R., ed.

Flores, Ivan.
Computer logic; the functional design of digital computers. 458p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $12.

Design news, Dec. 19, 1960, p.68. ⅝ col.

"Here for the first time is an explanation in complete block-diagram analysis of each operational unit of a digital computer, describing and illustrating in detail just how a computer is put together and how it works. With only a minimum of scientific and mathematical background, you can understand how a control unit or an input/output unit functions. The logic of typical core and drum memories is presented, and the logic for all the processes of arithmetic is exhaustively discussed . . . A complete illustrative problem embodies the main ideas of the text . . . Clearly stated with applications in many fields, the problem puts into practice the varied phases of computer work."

Product engineering, Jan. 16, 1961, p.70. ⅝ col.

"Not a designer's handbook, but simply another description of what a digital computer is and how it works. However, the author has chosen a unique approach. He shows the computer and its elements in the form of block diagrams and eschews computer-design mathematics, Boolean algebra, electronics and circuit theory. Most of us will never miss them . . . Another unique feature is the thorough glossary . . . 50 pages of concise definitions of common computer terms . . . Begins with an over-all look at the machine and what it can do, and then proceeds to the details of how it does it." *C. J. L.*

Foust, A. S., and others.
Principles of unit operations. 578p. 1960. Wiley, New York, $15.

A.I.Ch.E. journal, Dec. 1960, p.5D. ¾ col.

"The unit operations of chemical engineering are presented in unified groups related by identical basic principles. The general approach employed emphasizes the scientific laws upon which the operations are based; the arrangement certainly appears to give the student a much greater opportunity to understand this basis than did the previous classical approach to unit operations . . . It is evident that this volume represents quite a departure from the traditional presentation of unit operations, and the reviewer feels the authors are quite justified in saying '. . . the unification presented here is the next logical step in the evolution of the concept of unit operations'." *John B. Butt.*

Chemist, Jan. 1961, p.32. ¼ col.

"This introductory text offers a welcome clearness of presentation . . . Emphasizes similarities among various unit operations by use of physical models or mathematical relations or both. Complicated problems are handled by applying the general equations . . . Divided into three parts: Stage Operations, Molecular Transport, and Applications to Equipment Design. Included in the appendices are Model Theory, Equipment Design Data and Physical Data, some of which is not available in standard reference works." *William M. Dunne.*

Fox, Harod Munro, & **Vevers,** G.
Nature of animal colours. 246p. 1960. Macmillan, New York, $6.50.

New scientist, Dec. 15, 1960, p.1610. 1⅛ col.

"Does not deal at all with the biological uses to which colours are put; it is concerned solely with their chemical and physical nature and with their physiological significance where this is known . . . Packed with information, all written in a most readable style. Relevant chemistry and physiology are set out clearly and simply . . . Though written primarily for university teachers and students, the authors claim, reasonably enough, that with its full documentation their book will be useful to research workers; and with its lucid style it could find a place in sixth form school teaching or indeed in general reading . . . Contains a chapter of instructions for interesting class experiments." *V. B. Wigglesworth.*

Fréchette, V. D., ed.
Non-crystalline solids. 530p. 1960. Wiley, New York, $15.

Journal of applied physics, Dec. 1960, p.2318. ⅛ col.

"These papers represent the proceedings of a conference which brought together leading investigators from several fields interested in determining the domain of the term 'non-crystalline solids,' the structure of such solids, the methods capable of disclosing their structure—and the basis for finding, explaining, and deriving their properties . . . This treatise creates a common ground for dealing with phenomena and fundamentals of conventionally separated materials such as glass, evaporated films, and plastics . . . Also brings insight into the definite specificity of chemically different glasses (e.g., sulfur vs silica glass)."

Journal of the Franklin Institute, Dec. 1960, p.539. ⅝ col.

"Subject matter presented falls into four main categories. Interaction of electromagnetic radiation with non-crystalline solids is dealt

with in Chapters 1 through 5; electronic structure of non-crystalline solids in Chapters 6 through 8; relaxation processes in non-crystalline solids in Chapters 9 through 12. The remaining chapters are devoted to structure and properties of special systems. Discussion at the end of each chapter serves as an excellent critical evaluation of each author's presentation . . . It is regrettable that the book did not devote a chapter to present-day ideas on glass structure, particularly the vitron theory . . . This omission can be tolerated in view of the wealth of information which it supplies in an increasingly important area of solid-state science." *Leigh Johnson.*

Freund, Hugo, ed.

Handbuch der Mikroskopie in der Technik. 8v. v.1, pt.2: Allgemeines Instrumentarium der Auflichtmikroskopie. 757p. 1960. Umschau, Frankfort, Germany.

Industrial diamond review, Nov. 1960, *industrial diamond abstracts,* p.A296. ⅛ col.

"Devoted to incidental light microscopes and contains eleven articles on the different aspects of the subject, including one on microscopic hardness testing. The choice of specimens, preparation of slides, development and use of high-temperature microscopes, and use of interference microscopes and photographic apparatus are all discussed in detail. A subject index is provided . . . and a complete analysis of each chapter follows the index of chapters at the beginning . . . Beautifully produced with abundant illustrations and clear arrangement of the material under sub-headings." *A.*

Journal of the South African Institute of Mining and Metallurgy, Nov. 1960, p.249. ¼ p.

"Deals with the optical principles of polished section microscopy, the relevant instruments and accessories and their applications. The eleven chapters, written by well-known authorities in their respective fields, are profusely illustrated and contain a wealth of information . . . A person intending to equip or enlarge a laboratory for the microscopic examination of ores, concentrates, metals, slags, coal, or other specialized products should find this volume of great value, not only as a guide to the type of microscope and other accessories best suited to his particular requirements, but also as a valuable reference on modern laboratory techniques." *G. M. K.*

Frey, H. E.

Methoden zur Chemischen Analyse von Gummimischungen. Ed.2. 169p. 1960. Springer, Berlin, $5.

Journal of applied polymer science, Sept.-Oct. 1960, p.255. ⅛ col.

"A second edition of a small German book which includes a final new chapter in English by K. E. Kress on absorption spectroscopy. Although 30 pages are devoted to identification and estimation of rubber polymers, the book is largely concerned with compounding agents used in rubbers, such as plasticizers, pigments, accelerators, and vulcanizing agents. The literature in this field is reviewed, and brief procedures for analysis are given. Fluororubbers, halogenated butyls, and new diene rubbers prepared by stereoregulated ionic polymerization are not included. For analysis of polymers and monomers in the rubber field Frey's book can not compare in utility to the more complete recent books by Hummel and by Kline." *O. E. Schildknecht.*

Friedrichs, F.

Das Glas im chemischen Laboratorium. Ed.3, revised. 154p. 1960. Springer, Berlin, DM 18.

Journal of scientific instruments, Dec. 1960, p.494. ⅛ col.

"Concerned almost entirely with the description of standard pieces of glass chemical apparatus. Eighty pages are devoted to descriptions of apparatus such as extraction apparatus, burettes, pyknometers, thermometers . . . It would appear that where a DIN standard exists reference is made to it. A short section dealing with the properties of glass is written in general terms and contains no numerical data. No compositions are given for the different glasses . . . As the title suggests this book would probably be useful as a reference book in a chemical laboratory." *R. W. Douglas.*

Gliner, B. M.

Determination of the mechanical and technological properties of metal; translated from the Russian. Ed.2. 160p. 1960. Pergamon, New York, 50s. 10d.

Foundry trade journal, Dec. 29, 1960, p.835. ⅜ col.

"Mr. Gliner in this book gives an engineering approach to the field of mechanical testing. His book is an engineer's study of equipment and apparatus used in testing, what these are used for and how they should be used. The very near description of this book would be a mechanical testing manual . . . As a manual of mechanical testing this is a good book, but its main interest lies in its review of Russian techniques used in this field, for as a textbook in English it makes no new contribution to the subject." *V. Kondic.*

Goodier, J. N., & **Hoff,** N. J., ed.

Structural mechanics; proceedings of the first symposium on naval structural mechanics held at Stanford University, California, in 1958. 598p. 1960. Pergamon, New York, $8.

Journal of the Royal Aeronautical Society, Dec. 1960, p.778. ½ col.

"The opening survey of the many and varied problems of design of ships was followed by a very thorough review of all the latest material available and under development for use at air and at high temperatures. There were papers on linear elasticity . . . on finite strain, on viscoelasticity, on thermal stresses, on plasticity, on photoelasticity and photoplasticity and on fracture . . . All the papers present highly competent surveys of their own fields by acknowledged experts, but they vary widely in style. Several are very readable, but others make no concession to the inexpert reader and many list over 100 references." *H. L. Cox.*

Gouschev, Sergei, & **Vassiliev,** M., ed.

Russian science in the 21st century. 222p. 1960. McGraw, New York, $4.95.

Product engineering, Jan. 9, 1961, p.89. 1⅛ col.

"A series of interviews by the editors with

29 members of the Soviet Academy of Sciences, each a specialist in some field of science. It is a series of dreams of the world 50 years from now, based on what we know and dream today . . . This isn't a book to challenge *Mein Kampf* as a blueprint or master plan for the future. *Mein Kampf* was the program of a single man who could implement his ideas; this book is the program of a committee—which inevitably breaks into divergent elements when forecasting. It is still, however, the best compilation this reviewer has seen of forward-looking technological ideas." *E. J. T.*

Greenfield, Jack.
Practical auto service and installation. 160p. 1960. Gernsback, New York, $4.60.

Electronic technician, Jan. 1961, p.68. ⅛ col.

"Auto radio servicing can demand unusual electronic know-how and physical dexterity from service technicians. This book should go a long way to simplify repairs and removal-installation problems that exist when repairing these units . . . Illustrations are numerous and excellent. If you repair—or intend to repair—auto radios, this guide is *must* reading."

Greenspan, Donald.
Theory and solution of ordinary differential equations. 148p. 1960. Macmillan, New York, $5.50.

American scientist, Dec. 1960, p.362A. ⅖ col.

"Courses in differential equations have various objectives, such as reviewing techniques of solution, showing applications in science and engineering, or illustrating general mathematical concepts. This little book distinctly emphasizes the latter, briefly presenting some topics that are usually not mentioned in texts on differential equations . . . Achieves a good compact presentation of the mathematical basis of ordinary differential equations." *Peter L. Balise.*

Griffith, Stanley V.
Alluvial prospecting and mining. Ed.2, revised. 245p. 1960. Pergamon, New York, 42s.

Mining electrical & mechanical engineer, Dec. 1960, p.224. ⅖ col.

"Since the publication of the original book in 1938, improved mining techniques and new methods employed in the working of alluvial deposits have made it necessary to bring up to date this standard reference work . . . An excellent bibliography at the end of the book covers the most important articles on alluvial mining that have been published in English-speaking countries over the past thirty years. In the thirteen chapters . . . sections are devoted to such topics as prospecting methods, sampling and valuation; slucing, hydraulicking, blasting, etc. . . Tailored to the needs of open-pit miners and mining geologists; however, even for those not actively engaged as such this well-illustrated book makes interesting reading." *A. G.*

Haim, George, & **Rottner,** E.
Polyäthylen-Halbzeug. 216p. 1960. Hanser, Munich, Germany, DM 28.

British plastics, Dec. 1960, p.597. ⅛ col.

"The first sections . . . deal with the chemistry and physics of commercial polythenes, the historical developments of plastics welding, and practically all welding techniques used in polythene processing . . . Covers equipment of workshops, machining, printing and cleaning, sheet container lining and pipelines. The authors have followed the development of polythene in great detail. Many questions arising in practical operation are explained carefully on the basis of numerous practical examples . . . Invaluable for works engineers and welders particularly."

Heal, T. J. See **McIntosh,** A. B., & **Heal,** T. J., ed.

Heys, H. L.
Introduction to electronic theory of organic compounds. 236p. 1960. Harrap, London, 16s.

Discovery, Dec. 1960, p.546. 1 col.

"Electronic theory is . . . so useful that it should be introduced, at least in an elementary form, at an early stage in the teaching of organic chemistry; it is therefore of prime importance that its presentation at that level, though perhaps simplified, should be clear, convincing, and fundamentally sound. These requirements are adequately satisfied in the present tax, which bears all the marks of having been written by a most competent teacher . . . Can be strongly recommended. At sixteen shillings, this is a remarkably good bargain." *L. N. Owen.*

New scientist, Dec. 29, 1960, p.1714. ⅖ col.

"Intended as a treatment suitable for the scholarship boy in the sixth form and for those beginning their professional career at university or technical college. The first half deals with valency theory and the factors influencing the reactivity of organic compounds, and the second half with substitution, addition and elimination reactions involving both ionic and free radical mechanisms. It is in this distribution that the reviewer believes the book fails . . . A brave try at a difficult job, but the more elementary student still awaits his interpreter." *Peter Sykes.*

Hiester, N., & **Cubicotti,** D., ed.
High temperature technology. 348p. 1960. McGraw, New York, $15.

Physics today, Dec. 1960, p.53. ½ col.

"This book, which is a collection of review papers on the techniques and measurements, the materials, the processes, and the behavior of materials at elevated temperatures, will be very useful . . . [The papers] are an invaluable introduction but due to limitations of time and space they are only introductions (with, fortunately, very extensive lists of references). In addition, this book contains a large section on high-temperature research abroad, covering the United Kingdom, France, Germany, Japan, and Scandinavia. This reviewer feels that a review of the high-temperature research in the Soviet Union would also have been of value." *Joseph Katz.*

Hoff, N. J. See **Goodier,** J. N., & **Hoff,** N. J., ed.

Hugot, Emile.

Handbook of cane sugar engineering; translated and revised with the collaboration of the author, by G. H. Jenkins. 872p. 1960. Van Nostrand, Princeton, N. J., $35.

Chemistry & industry, Dec. 10, 1960, p.1528. 1¼ col.

"A completely revised translation of 'La Sucrerie de Cannes' . . . Jenkins, in collaboration with Hugot, has taken care to bring the manual up to date by pruning any obsolete material . . . Includes everything concerned with the operation of a cane sugar factory, commencing with the delivery of cane at the factory to the storage and drying of sugar . . . Each chapter gives a clear and concise account, with engineering formula showing how the calculations are made, and the book should prove invaluable to managers, engineers, chemists and others concerned with either running the factory or the construction of new factories." *H. C. S. de Whalley.*

Hume-Rothery, William.

Atomic theory for students of metallurgy. Ed.3, revised. 427p. 1960. Institute of Metals, London, 50s.

Engineering, Dec. 2, 1960, p.764. 1 col.

"The author's style is reasonably easy to read, considering the nature of the subject, but this is not a book for an idle moment, it definitely requires (and merits) close attention . . . Enlarged in this third edition and includes some valuable additions. Among the new items are some experimental methods for determining the electronic structure of metals, which, in the reviewer's opinion, are essential if the difficulties in the subject are to be brought home. Recent work on the transition metals has been added . . . 'Hume-Rothery' as this book is generally termed among metallurgists has been a standard textbook since the first edition. It will continue to be so, providing an ideal introduction to the subject." *C. R. Tottle.*

Metal industry, Dec. 23, 1960, p.519. ⅝ col.

"No one has done more to introduce the atomic theory to the metallurgist than has the author . . . Hume-Rothery, realizing that many students of metallurgy would not be able to understand fully the Papers and text books that were written by mathematical physicists, introduced this monograph—'in the hope of providing a bridge by means of which the student of metallurgy may be led to an understanding of the general ideas on which the new theories are based' . . . A concise presentation of the general background of metal physics without any complicated mathematics." *D. L.*

Jensen, Alfred, & **Chenoweth,** H. H.

Applied engineering mechanics. Ed.2. 409p. 1960. McGraw, New York, $6.50.

American machinist/metalworking manufacturing, Dec. 12, 1960, p.232, 235. ⅝ col.

"New material . . . includes coverage of belt friction, hydrostatic loads, retaining walls, suspension cables, and walls. In the dynamics section, there is new material on noncentroidal rotation, dynamic equilibrium of plane motion, and on impact and impulse . . . The writing is textbookishly stiff, which is evidently necessary in any textbook. However, there is no rambling; many of the basic principles are simply stated, then illustrated with sketches—and these are generally quite good." *C. D. E.*

Jolly, William L.

Synthetic inorganic chemistry. 196p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $8.

Chemical & engineering news, Jan. 16, 1961, p.79. 1 col.

"[The author] has developed a course in synthetic inorganic chemistry that is characterized by three main features: (1) The approach to synthesis should be dictated by an adequate consideration of all relevent physical principles, (2) the emphasis should be placed upon methods and techniques rather than upon the illustration of compound types, and (3) the substances actually synthesized should be sufficiently unusual to stimulate continued interest . . . One can . . . state unequivocally that any teacher who is in need of a text for a course in inorganic synthetic methods will do his students an injustice if he fails to respond to the commendable approach portrayed in this book." *George W. Watt.*

Jones, Franklin D.

Machine shop training course. Ed.4. 2v. 1124p. Hitchcock Pub. Co., Geneva Rd., Wheaton, Ill., $9.

Carbide engineering, Dec. 1960, p.29. ⅛ col.

"A standard treatise on machine shop practice . . . Has over 1124 pages of questions and answers, selected to cover the important elements of machine shop practice and other subjects closely allied to shop work. In each case the answers present the essential points clearly and fully, averaging about one book page in length. The answers contain useful facts and shop rules, and are accompanied by clear drawings and photographs whenever needed . . . Designed for the shop man . . . as well as for use as a textbook and guide for shop training courses."

Kittel, Hans, ed.

Pigmente; Herstellung, Eigenschaften, Anwendung. 824p. 1960. Wissenschaftliche Verlagsgesellschaft, Stuttgart, Germany, DM 178.

Journal of the Oil and Colour Chemists' Association, Dec. 1960, p.873. ⅔ p.

"The completely revised, very much enlarged and renamed 3rd edition of the late Hans Wagner's 'Körperfarben', which was well known as a standard work on pigments . . . While maintaining the character of the previous edition, the editor and his co-writers have produced a work which covers a very wide range of present-day knowledge on pigments of both organic and inorganic origin . . . Anyone with even a remote interest in pigments, whether technical or commercial, will find this book very handy and of assistance in their daily routine search for answers." *M. Galewski.*

Koch, K. M., & **Reinbach,** R.

Einführung in die Physik der Leiterwerkstoffe. 255p. 1960. Deuticke, Vienna, 222 Austrian s.

Proceedings of the Physical Society, Dec. 1, 1960, p.1005. ⅓ p.

"Intended to help in building the requisite bridges between science and technology. Its central chapter presents a useful descriptive review of the physical properties of technically important conducting materials—copper, aluminium, zinc, iron, various associated alloys, and materials with specialized uses as resistors, heating elements, resistance thermometers and thermoelectric circuit elements. These technical matters are given a scientific framework in four chapters of introduction, and one of conclusion, which contain an elementary treatment of the relevant aspects of modern solid-state physics . . . The authors have successfully avoided the major pitfalls and can be said to have made a creditable attempt at a difficult task of exposition and synthesis." *E. H. Sondheimer.*

Kurnosova, L. V., ed.

Artificial earth satellites; translated from the Russian. 2v. 107p. 1960. Plenum Press, New York, $9.50.

Journal of the Royal Aeronautical Society, Dec. 1960, p.774. ⅔ col.

"Containing 22 papers, the work of over 40 contributors, it provides a useful record of the results obtained from the instruments carried in the first three Soviet satellites. Volume 1 deals with the investigations carried out using Sputniks 1 and 2; Vol. 2 gives the data obtained with Sputnik 3 and individual rockets . . . The original texts of the two volumes, now combined in one book, were published by the U.S.S.R. Academy of Sciences Press, Moscow, in 1958. The bibliographies contain over 100 references." *M. D. Hull.*

Lea, F. C., & **Simons,** E. N.

Machining of steel. Ed.2. Odhams, London, 21s. 10d.

Foundry trade journal, Dec. 22, 1960, p.807. ⅜ col.

"Deals descriptively with the basic machining processes of turning, spacing, drilling, milling, broaching, reaming and sawing. Simple explanations are given of the design and operation of the various types of machine-tools used for these processes together with some excellent drawings of these machines and the tools used. The standard of treatment is suitable for apprentices, trainees and others requiring an introduction to this important branch of technology . . . The grinding process is not dealt with . . . Another omission is the cutting of screw threads using taps and dies." *J. W. K. Murch.*

Lebedev, S. A., ed.

Computer engineering; translated from the Russian. 184p. 1960. Pergamon, New York, $10.

Electronic engineering, Jan. 1961, p.50. ½ col.

"A rather disjointed collection of papers describing various aspects of computer engineering in the U.S.S.R. Almost half the book is devoted to a paper, entitled 'Digital Integrating Machines' (Differential Analysers), a theoretical design study for a digital differential analyser using drum storage. This is based largely on reports of American machines published between 1952 and 1956, and it is surprising to find that so many references are incomplete and inaccurate . . . It seems that the main interest in the book is likely to lie in the picture it presents of computer engineering in U.S.S.R." *P. G. Briggs.*

Journal of the Institution of Electrical Engineers, Dec. 1960, p.730. ½ col.

"A collection of papers, largely unconnected except that all deal with some aspect of digital computation . . . The publication date in Russia is not mentioned, but there are no references later than 1956 . . . This coupled with the fact that the work nowhere acknowledges the existence of transistors, suggests that it does not give an up-to-date picture of Russian work on computers . . . Reproduced by photolithography, apparently from a typewritten text, and the quality of the few half-tones is poor . . . The cost of translating . . . appears to be much more expensive than original authorship." *E. H. Cooke-Yarborough.*

Leighton, Peter.

Moon travellers. 240p. 1960. Oldbourne Press, London, 16s.

New scientist, Dec. 15, 1960, p.1611. ⅘ col.

"Speculation about the Moon has always pleased and startled, and *Moon Travellers* is an account of this rather than of modern selenology. The author quotes liberally from the ancient world, though his choice is more restricted in the medieval period, when, as he tells us, the free run of imagination was checked by authority. From the 15th century, however, men began to dream again of what might exist on the Moon, and the most extravagant nonsense was written alongside of, and even interwoven with genuine scientific work . . . All this is well illustrated by readable quotations." *Edward Best.*

Letsky, B. M.

Practical manual of industrial finishes on wood, metal, and other surfaces. 251p. 1960. Chapman & H., London, 35s.

Journal of the Oil and Colour Chemists' Association, Dec. 1960, p.872. 1⅔ p.

"Intended to provide 'a brief, compact handbook for reference and immediate value to students, paint manufacturers, paint chemists, paint consumers, foremen, charge-hands, application personnel, directors, engineers and works managers'. So far as possible within its limits it achieves this aim, and there is no doubt that all those to whom it is directed will find much of value in it . . . Excellent both in intent and content, and it should certainly be in the possession of everyone who has an interest in industrial finishes." *A. Mclean.*

Li, Wen-Hsiung.

Engineering analysis. 362p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $8.25.

STWP review, Jan. 1961, p.26. ¼ col.

"Devoted to the application of mathematical theory to problems in physics and engineering, and to the solution of these problems in mathematical terms. Dr. Li's book is especially valuable because it lends life to mathematical theory which sometimes is construed to be without purpose . . . The reviewer was particularly impressed because the problems illustrated are characteristic of many fields—electrical, mechanical, structural, hydraulic, and many others. The earnest student of engineer-

ing easily becomes proficient in the derivation and solutions of equations for particular problems." *C. M. Shekro.*

Libes, S.

Repairing transistor radios. 159p. 1960. John F. Rider, New York, $3.50 unbound.

Electronics world, Feb. 1961, p.86. 8 l.

"The new and special techniques involved in servicing transistor receivers are explained in this volume which also provides a simple and systematic explanation of basic transistor theory. Written for the technician, the book should prove of value to all seriously interested in transistor work."

Linnett, J. W.

Wave mechanics and valency. 184p. 1960. Methuen, London, 18s.

Chemistry & industry, Dec. 10, 1960, p.1527. 1½ col.

"Much of the material from Chapter VII onwards could not be used in teaching unless preceded by an introductory course, partly because the author's treatment tends to be rather detailed, and partly because his zeal for electron correlation seems to have obscured his treatment of other features of basic importance in chemical bonding. Thus the book will not solve all teaching problems, but, particularly when used in conjunction with Coulson's 'Valence' . . . will go a long way towards doing so. For the good influence it will exert on teaching it may be unreservedly welcomed and its author warmly congratulated." *D. Feakins.*

Louisell, William Henry.

Coupled mode and parametric electronics. 268p. 1960. Wiley, New York, $11.50.

Electronic industries, Dec. 1960, p.56. ¼ col.

"Emphasizes three specific aspects of microwave electronics. First, it serves as an introduction to the theory of coupled modes and shows how the use of this approach simplifies the study of coupled systems. It then proceeds to the presentation of a unified theory of traveling wave tubes, backward wave oscillators, and similar devices. Finally, it treats the theory of parametric amplifier, oscillators, and frequency converters . . . Reader who is familiar with only the standard treatment of these devices will find the coupled mode approach to the problem illuminating and useful. This approach will yield new insight into the physical mechanisms involved in the coupling of waves."

McDonald, Donald.

History of platinum; from the earliest times to the eighteen-eighties. 254p. Johnson, Matthey & Co., Ltd., London, 35s.

Mining magazine, Dec. 1960, p.353. ½ col.

"In a style both elegant and precise the author surveys the story of platinum from its earliest occurrences through 150 years of scientific inquiry, diligently pursued all over Europe and as a rule unselfishly shared. When supplies from Spanish South America declined at the end of the eighteenth century the new Russian fields soon provided a source from which all the scientific and industrial advances of the nineteenth century were fed . . . The transaction whereby, in 1882, Johnson, Matthey and Co. took over the whole of the Imperial Russian stocks of platinum marks the beginning of the end of that era which Mr. McDonald deals almost nostalgically . . . Format, illustrations, and bibliography leave nothing to be desired."

McIntosh, A. B., & Heal, T. J., ed.

Materials for nuclear engineers. 384p. Temple Press, London, 75s.

Nuclear engineering, Jan. 1961, p.35. ⅝ col.

"Represents the most up-to-date digest of the properties of the materials considered that is available. Somewhat naturally the book leans towards the gas cooled graphite moderated technology but not exclusively and the authors have been careful to include as much overseas information as possible where this is relevant . . . It is important to note that although the book has been compiled by metallurgists it has been written for the engineer and is designed to provide him with a reference work prepared in a language with which he is familiar and in a form that is directly relatable to engineering problems. In bridging the gap between the two disciplines its success is noteworthy."

McKenzie, A. E. E.

Major achievements of science. 2v. 563p. 1960. Cambridge, New York, $9.

New scientist, Nov. 24, 1960, p.1410. 1⅛ col.

"[Mr. McKenzie] has selected nineteen major generalizations in modern science and he has discussed them with emphasis upon the part played by the one or two giants who formulated and focused the generalizations . . . The reader Mr. McKenzie has in mind is the sixth-form student and, in those few universities enlightened enough to teach the history of science, the undergraduate . . . Written in a style which makes a welcome demand on the intelligence of the reader but not much demand on his acquaintance with the jargon of science." *Eric Ashby.*

Maercks, J.

Bergbaumechanik. Ed.5, revised by W. Ostermann. 612p. Springer, Berlin, DM 36.

Mining magazine, Dec. 1960, p.353. ⅞ col.

"Purports to be both a textbook for mining schools and a handbook for practical mining men. Actually it is a seemingly exhaustive treatise on applied mathematics, with particular reference to mechanization in mining . . . Arranged under four main sections—statics of solid bodies, dynamics of solid bodies, strength of materials, mechanics of fluids—and these are subdivided into smaller sections numbered consecutively throughout, there being 140 such sub-divisions. Undoubtedly the book is capable of serving the two objects for which it was written."

Mallette, M. F., and others.

Biochemistry of plants and animals. 552p. 1960. Wiley, New York, $8.50.

Journal of the American Oil Chemists' Society, Jan. 1961, p.23. 1 col.

"Well written and easily understood. In some chapters one gets the feeling that it is written too simply and 'talks down' to the upper classman for whom it is intended . . . Excellent as a survey of the entire field of biochemistry for undergraduate students who will go no further, such as nurses and home economics and general agriculture majors . . . Wholly inadequate however to build upon for more advanced study, in which area it is no competitor for Fruton and Simmond's 'General Biochemistry,' also published by John Wiley and Sons." *Raymond Reiser.*

Menzel, Donald H., ed.

Radio noise spectrum. 183p. 1960. Harvard Univ. Press, Cambridge, Mass., $7.50.

Journal of the Franklin Institute, Dec. 1960, p.539. ⅞ col.

"The chapters are in the form of either review articles or reports on the specific research program of the author. Discussion among the participants of the conference is also included, as well as a few references, which are generally not intended to constitute complete bibliographies on the subject matter of the chapter . . . The contributions represent an admixture of purely scientific problems and subjects of specific interest to the communications engineer. Each chapter follows the very admirable practice of commencing with a definition, in terms which can be understood by non-specialists, of the subject matter to be discussed." *M. A. Pomerantz.*

Sky and telescope, Jan. 1961, p.45. 2⅛ col.

"The title . . . is somewhat misleading. It suggests that here is yet another of the many works on radio astronomy that have appeared in recent years. Instead, it is a collection of 13 papers presented by radiophysicists during a conference at Harvard College Observatory in 1958 . . . Despite . . . omissions, the book is a valuable addition to the literature, and meets a definite need. Without giving a great deal of description of the physical processes involved, it provides radio engineers with well-written accounts of the various natural sources of radio noise." *J. V. Evans.*

Meyerhoff, Albert J., ed.

Digital applications of magnetic devices. 604p. 1960. Wiley, New York, $14.

Product engineering, Jan. 16, 1961, p.70. ½ col.

"A compilation of papers from several authors, all members of the staff of the Burroughs Corp Research Center . . . Divided into five major parts: introduction, parallel magnetic-pulse amplifiers, series magnetic-pulse amplifiers, memories, transistor magnetic-pulse amplifiers. In addition, there are chapters on carrier magnetic amplifiers and multiaperature-core magnetic-pulse amplifiers. The introduction is of questionable value; it is doubtful that anyone who wants to learn the technical details of magnetic devices will not already be familiar with most of the material in these first four chapters. The other chapters are well illustrated and fully indexed." *C. J. L.*

Miller, E. See **Cadoff,** Irving B., & **Miller,** E., ed.

Moon, Parry, & **Spencer,** D. E.

Foundations of electrodynamics. 315p. 1960. Van Nostrand, Princeton, N. J., $9.75.

Electronic industries, Dec. 1960, p.60. ¼ col.

"Covers most engineering applications with maximum simplicity and minimum ambiguity. Using the logical approach, the authors develop field theory on a distinctly macroscopic level, since a completely microscopic treatment is impossible at present. For simplicity, they use the non-realistic approach in the first 10 chapters; only in the final 2 chapters do they consider relativity . . . The principal innovation is a serious attempt to develop electrodynamics on a postulational basis and to define each concept in the most general terms."

Electronics, Jan. 20, 1961, p.98. 1½ col.

"Offers a novel and refreshing approach to a classical subject. Although . . . intended for seniors or first year graduate students in electrical engineering, practicing engineers should find it to be an excellent addition to their library. The strength of the book lies in stating clearly from the beginning the basic postulates of electromagnetism and stressing topics too easily dismissed in other texts dealing with the subject. The authors are to be complimented for their treatment of retarded potentials, their careful derivation of the divergence and Stoke's theorems in terms of retarded quantities and their logical development of electromagnetic induction." *H. Hodara.*

Moulton, Forest R., & **Schifferes,** J. J., ed.

Autobiography of science. Ed.2, revised and enlarged. 748p. 1960. Doubleday, Garden City, N. Y., $5.95.

Product engineering, Jan. 16, 1961, p.70. ⅜ col.

"A history of science in the words of those that made it. Starting with the Book of Genesis, Chap I, and concluding with passages from Donald Culross Peattie's 'Almanac for Moderns,' the editors take the reader on a comprehensive tour of the development of scientific thought as expressed by those who lived it. Other books have made an attempt at digesting the great scientific writings but their common failing has been in preparing an accurate, readable explanatory text . . . This text is most readable and contributes a wealth of valuable background information . . . Contains almost 100 new pages covering the most recent scientific developments and advances in engineering." *B. A. L.*

Ordway, Frederick I., & **Wakeford,** R. C.

International missile and spacecraft guide. 420p. 1960. McGraw, New York, $12.

Interavia, Dec. 1960, p.1572. ⅓ col.

"Beginning with the invention of gunpowder by the Chinese around the year 1200, the authors recount the whole history of rocketry up to the present day. A general introduction to the various types . . . is followed by examples of early developments. The chapter on space research vehicles gives details of artificial satellites, space probes, propulsion systems, instruments and research objectives. The text is supplemented by a large number of photographs . . . and clear drawings. The second part . . . describes present-day missiles, research rockets and spacecraft . . . Should

find its place next to Jane's in every self-respecting aviation and astronautics library." *D. E.*

Parker, William V., & **Eaves,** J. C.
Matrices. 195p. 1960. Ronald, New York, $7.50.

American scientist, Dec. 1960, p.379A. ⅔ col.

"Offered as the text for an introductory college course devoted to matrices. The topics discussed are, in order, matrix algebra, linear transformations, bilinear forms, systems of linear equations, congruence of matrices, quadratic forms, vector spaces, determinants, similarity of matrices and canonical forms . . . The value of the book is probably to be found in acquainting students of other fields with some properties of matrices, although the omission of all discussion of linear inequalities, linear programming, and combinatorial problems severely limits its scope." *Howard Levi.*

Parkinson, D., & **Waid,** J. S., ed.
Ecology of soil fungi. 324p. 1960. Liverpool Univ. Press, Liverpool, England, 42s. 6d. net.

Soil science, Jan. 1961, p.75. ⅝ col.

"An international symposium on the ecology of soil fungi was held in the department of botany, University of Liverpool, in 1958, and this book contains the 28 papers that were presented there . . . Aim was to depart from the earlier counting techniques and the listing of species and to focus attention on the parts these microbes play in the soil and on the biochemical changes effected by them . . . The 35 contributors are, for the most part, from Great Britain, but Canada, France, Belgium, Germany, and New Zealand are also represented. Each paper is well documented, and the discussion of each included. Author and subject indexes are appended . . . A highly interesting volume."

Paschkis, Victor, & **Persson,** J.
Industrial electric furnaces and appliances. Ed.2, revised and enlarged. 607p. 1960. Interscience Publishers, New York, $24.

Canadian metalworking, Jan. 1961, p.7. 1⅝ col.

"A valuable part of the library of everyone interested in the design, construction, and operation of electric furnaces and appliances. The authors have endeavoured to present as complete a picture as possible of their subject, but, of necessity, have had to be extremely brief in their presentation. The reader is assumed to have a thorough knowledge of physics, electricity, and mathematics. In parts, the latter become very involved and the reader is required to make a close study of the content in order to benefit from it. Although the practical side of the subject is not overlooked, there are many practical data which are missing." *H. U. Ross.*

Iron and steel engineer, Dec. 1960, p.278, 280. ⅝ col.

"The two volumes of the first edition are consolidated into one, enabling a desirable rearrangement of the material. The thermal problems separated into two volumes of the first edition are now combined . . . Deals with thermal and electrical problems in electric furnace design; and an attempt is made to present a sound and rigorous basis for the electrical computations of the arc furnace and induction heating furnace. In the field of arc furnaces, oxygen lancing and induction stirring . . . are . . . included in the treatment. Also included . . . is a brief discussion of special melting furnaces for unconventional metals, such as consumable electrode and skull furnaces."

Päsler, Max.
Mechanik deformierbarer Körper. 199p. 1960. Walter de Gruyter, Berlin, DM 5.80 unbound.

Physics today, Dec. 1960, p.61. ⅝ col.

"Graduate-level treatment of the mechanics of continuous media . . . A brief and clear presentation of the unified, general theory. The material is divided into three parts—mathematical tools, mechanics of solids, and mechanics of fluids . . . The manner of presentation cannot be considered unique but the subject matter is unusually complete and it is rare that both solids and fluids are discussed in a single volume. The treatment is probably too concise to serve as a text; however, it is an admirable reference work for the specialist and could also be a companion to the text for many courses." *Ellis H. Dill.*

Paul, Henry E.
Outer space photography for the amateur. 124p. 1960. Amphoto, New York, $2.50.

Science, Jan. 27, 1961, p.271. ⅕ col.

"After devoting the first three of the book's 12 chapters to general background and equipment, the author settles down to discuss the photography of star trails, rockets and satellites, the moon, the sun, eclipses, nebulae and galaxies (and comets and aurorae), and meteors and planets. He tells what kind of equipment is best for each and what type of film to use; he indicates the order of magnitude of the necessary exposure, and he warns the reader against some of the common mistakes. The errors . . . found . . . are few and mostly unimportant . . . An excellent book to recommend to amateurs seeking answers to questions about celestial photography." *Charles H. Smiley.*

Peacocke, T. A. H.
Small scale experimental chemistry. 164p. 1960. Longmans, New York, 8s. 6d.

Chemical age, Dec. 24, 1960, p.1055. ⅔ col.

"Except for 21 pages describing some inorganic preparations and 10 pages on reagents, construction of apparatus and the subject index, the text is devoted to qualitative analysis by a conventional scheme and using semi-micro techniques. There is a short account of the basic theory, the apparatus and techniques, and a proper emphasis on the use of ionic equations . . . All is adequate for the level intended but an improvement would be to combine the schemes for simple and more difficult mixtures so that the student does not develop the habit of attempting to identify a group precipitate without resolving it into sub-groups."

Pearson, Claude E., & **Parkins,** R. N.
Extrusion of metals. Ed.2, revised. 336p. 1960. Wiley, New York, $7.50.

British foundryman, Dec. 1960, p.viii. ¼ col.

"A standard work of the subject . . . The process of extrusion has developed considerably in recent years and this new edition has been thoroughly revised and brought up to date. The most noteworthy progress has been in the understanding now reached of the complex deformation which takes place in metals under extrusion. A mathematical treatment of the theory of flow has been evolved, which has been of great value in industrial practice. The trend towards automated extrusion equipment has increased the efficiency of the process, which is now a dominant method of working metals into required shape. High-power presses now permit production of large sections and the working of high-performance alloys. Foundrymen may see the process of extrusion as a rival to their traditional craft for the production of a variety of components."

Metal industry, Dec. 23, 1960, p.519. ⅜ col.

"It is felt that the present authors have not been too successful in giving a balanced picture of modern extrusion technology. For example, press containers are dealt with in one page, bridge dies are only briefly mentioned, no reference has been found to spark machining of dies, and the cold extrusion of steel occupies a page. On the other hand, an old Krupp press designed for direct and indirect extrusion is described in some detail, and two pages devoted to the extrusion of granulated cathode copper are reprinted without change. Nevertheless, students, for whom the book is presumably intended, could study it with considerable profit." *N. S.*

Penfield, Paul, jr.
Frequency-power formulas. 168p. 1960. Wiley, New York, $4.

Electronic industries, Jan. 1961, p.64, 66. ¼ col.

"The first systematical and general treatment of frequency-power formulas . . . Centers on the formulas announced in 1956 by J. M. Manley and H. E. Rowe of the Bell Telephone Laboratories, and asks 'What systems obey the Manley-Rowe formulas and how can these formulas be extended?' The answer is that the formulas are obeyed by any system with an energy-state function, and in particular by distributed systems that obey Hamilton's principle . . . Also describes three other types of frequency-power formulas that have equal theoretical standing with the Manley-Rowe type of formulas, although they have fewer practical uses."

Pinder, A. R.
Chemistry of terpenes. 223p. 1960. Chapman & H., London, 50s.

Chemistry & industry, Dec. 17, 1960, p.1566. ¾ col.

"Written with the needs of the honours undergraduate in mind and . . . is a source of information intermediate between that given in the general text-book and the comprehensive monographs of Simonsen and his co-authors. The introductory chapter . . . on the essential oils is instructive but in a second edition a rather longer treatment would appear desirable. The chapter on the determination of structure . . . is a model of clarity and is pointed skilfully at the chapters which follow on acyclic, monocyclic and bicyclic monoterpenes, sesquiterpenes, diterpenes and tetraterpenes . . . A systematic, up-to-date text-book for the honours graduate which should prove of considerable interest to the chemist seeking a general survey of modern terpene chemistry." *T. F. West.*

Polunin, Nicholas Vladimir.
Introduction to plant geography and some related sciences. 640p. 1960. McGraw, New York, $10.

Nature, Dec. 10, 1960, p.882. ⅛ col.

"Intended to provide 'an introduction not only to Plant Geography in the wide sense, but also to much of Plant Ecology and Sociology, to the Plant Kingdom as a whole, and to Economic Botany'. Such a task has obvious difficulties, and the subjects make a strange mixture for what is presumably meant to be essentially an introductory text-book on plant geography . . . A great deal of space is occupied by material not immediately relevant to plant geography. As one consequence of this, many of the important phytogeographical subdivisions of the world are very inadequately considered. Another criticism concerns the sequence of chapters . . . On the other hand, it must be fairly stated that on the whole the descriptive statements are accurate as far as they go." *W. B. Turrill.*

Popp, Henry W., & **Grove,** A. R., jr.
Botany; a textbook for colleges. Ed.3. 571p. 1960. McGraw, New York, $8.95.

Garden journal, Jan.-Feb. 1961, p.28. 9 l.

"This third edition of a well-known textbook is largely rewritten, rearranged, and even more sumptuously illustrated. Discussions of such topics as growth substances and viruses are expanded, and a more up-to-date system of classification is adopted. The old chapter on 'Family of Angiosperms' is omitted. Errors in the treatment of inflorescences and of nomenclature are retained." *H. W. Rickett.*

Porczynski, C. Z. Carroll-. See **Carroll-Porczynski,** C. Z.

Racker, Joseph.
Technical writing techniques for engineers. 234p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $6.95.

Consulting engineer, Jan. 1961, p.174. ⅜ col.

"The author does little more than to define five levels of technical writing, ranging from the operator's or nontechnical level on up to the advanced engineer's or scientific level. These levels of writing are amply illustrated with typical examples. In addition to this chapter there is one dealing with the use of the right word and one on the use of technical illustrations. A final chapter discusses the preparation of technical manuscripts. It is doubtful that the engineer who wants to write better can learn anything from this book other than how to arrange the material which he wants to present."

Electronic industries, Dec. 1960, p.60. ¼ col.

"Written for engineers and technicians, this

practical book, which was written by an engineer, presents a specific set of rules for writing in the engineering field. There is a detailed treatment of each phase of technical writing . . . Equips the engineer with the necessary tools to meet every day communication problems . . . Shows the engineer how to select the elements of his material, how to organize them, and how to present them to technical personnel at all levels."

Richter, Herbert P.

Practical electrical wiring. Ed.6. 592p. 1960. McGraw, New York, $7.95.

Design news, Dec. 19, 1960, p.69. ⅝ col.

"Fundamentals, terminology, basic principles, theory behind practices and practical wiring constructions are partial contents of this book that includes hundreds of on-the-job tips and short-cut suggestions . . . Shows how to plan and carry out all types of light and power wiring installations on the farm, in homes, factories, stores, schools and other structures. Rewritten, the sixth edition reflects the latest procedures in a special section on wiring problems and in another on principles of good lighting . . . Written in an easy-to-understand manner, the book enables the reader to learn electrical wiring, not only telling him how to do things, but also explaining the reasons why."

Rickart, Charles E.

General theory of Banach algebras. 405p. 1960. Van Nostrand, Princeton, N. J., $10.50.

Science, Jan. 27, 1961, p.270. 1½ col.

"The style of Rickart's book is concise but precise, and those who have an appreciable knowledge of the elements of functional analysis and general ring theory will find that it is not too difficult to read . . . An important contribution to the existing literature on this subject; the author and the publisher are to be congratulated for publishing this excellent book." *W. A. J. Luxemburg.*

Rieger, Hermann.

Der Freileitungsbau. 312p. Springer, Berlin, DM 45.

Electrical journal, Dec. 23, 1960, p.1694. 1 col.

"An excellent treatise covering the modern theoretical and practical approach to overhead line construction and one which is well worth reading by students and professional engineers alike . . . Deals concisely, but adequately . . . with the general problem of overhead design and construction for voltages up to 380 kV . . . A number of photographs are given; these are clear and it can well be wished that there were more. The author is to be complimented on providing so much information in so short a space . . . An interesting feature is the extensive bibliography at the end." *D. F. W. J.*

Roberts, J.

High frequency applications of ferrites. 166p. 1960. English Universities Press, London, 16s.

Electrical review, Dec. 23, 1960, p.1083. ½ col.

"In a small volume such as this, it is inevitable that there must be careful selection and abbreviation of the topics discussed, and it is probable that a reader without previous knowledge of ferrites and ferrimagnetism will find the first chapter uncompromisingly brief. However, in the following chapters the author has succeeded in his declared aim 'to provide information for the engineer and physicist involved in the design and use of high frequency equipment' . . . Provides a useful introduction to the theory and application of ferrimagnetic materials at high frequencies. It is to be regretted, however, that the author does not provide a more extensive bibliography for the benefit of his readers who seek more detailed treatment." *K. J. S.*

Robertson, Struan A.

Engineering management. Ed.2. 467p. 1960. Blackie, Glasgow, 30s.

Electrical review, Dec. 23, 1960, p.1083. ⅝ col.

"The problem for a teacher of management subjects to part-time students or to undergraduates, is that their lack of much feeling for the atmosphere of industry or of the complex nature of the problems involved may make the subject seem unreal . . . The techniques are mostly of the kind of which any intelligent and well-educated engineer could acquire a reasonable knowledge by reading a single textbook . . . Although much of . . . [the book] is excellent as an introduction . . . each specialised chapter is too condensed to be intelligible to someone reading about the subject for the first time." *A. A.*

Mining electrical & mechanical engineer, Dec. 1960, p.224. 1⅘ col.

"It would be an excellent thing if all engineering students were required to study at least the elements of management and as an aid to such study and to all who perforce must learn the art in later life, Mr Robertson's book can be thoroughly recommended. Those who are already in management of any kind which requires them to organize other people's activity cannot fail to benefit by studying this work." *R. T. L.*

Roll, F., ed.

Handbuch der Giesserei-Technik. 4v. v.2. 363p. Springer, Berlin, DM 66.

Metal industry, Dec. 16, 1960, p.504. ½ col.

"Consists of a number of specialist contributions from German foundry technicians well known for their work on cast iron. The metallography and constitution of the various aspects of the cast irons are well presented, with some excellent photomicrographs, diagrams and calculations . . . The introduction of alloying elements and their effect on the physical functions of the iron during melting and casting, and on the physical properties of the castings takes up a considerable part of the volume. Those interested in rolling mill roll manufacture will find some valuable information on foundry procedure, types of irons, chills and moulds in the last chapters . . . Valuable to the foundy [sic] expert, metallurgist and student." *I. W.*

Rothery, William Hume-. See **Hume-Rothery,** William.

Scheidegger, Adrian E.

Physics of flow through porous media. Revised edition. 313p. 1960. Macmillan, New York, $15.50.

Oil and gas journal, Dec. 19, 1960, p.85. ¼ col.

"There is a complete discussion of the past and present physical theories of flow through porous media, including a theoretical deduction of Darcy's law, a critical evaluation of the Kozeny theory, and a presentation of statistical flow theories . . . Expounds the theory of the advance of a saturation front in the displacement of a fluid in a porous medium by another which is immiscible with the first, and gives a complete theory of displacement of a fluid in a porous medium by another which is miscible with the first . . . Outlines methods for solutions of flow problems for turbulent flow, molecular flow, and flow with adsorption, in addition to reviewing briefly the standard methods applicable to cases where Darcy's law is valid."

Schifferes, J. J. See **Moulton,** Forest R., & **Schifferes,** J. J., ed.

Schikorr, G.

Haufige Korrosionshaden an Metallen und Ihre Vermeidung. 146p. 1960. Wittwer, Stuttgart, Germany.

Corrosion, Jan. 1961, p.26. ⅛ col.

"Volume 3 in a series . . . by the Baden Wurttenburg Industrial Commission . . . Discusses corrosion behavior of the common metals with chapters on galvanic, atmospheric corrosion; corrosion by building materials, water, soils, foods, fuel oil, combustion gases and fibrous materials. There is a list of titles of 36 books on corrosion including 13 in English, 21 in German and two in Czech. There are 520 references, constituting a good introduction to European corrosion literature. Schikorr is considered a world authority on corrosion . . . Also includes a section on analysis and diagnosis, a subject index and a section devoted to pictures of corroded articles."

Schlichting, H., & **Truckenbrodt,** E.

Aerodynamik des Flugzeuges. 2v. v.2. 485p. 1960. Springer, Berlin, DM 61.50.

Interavia, Dec. 1960, p.1571. ¼ col.

"The clear arrangement of the subject matter, consistent use of exactly defined terms, accurate and detailed deductions, ample numerical examples and wealth of illustrations give the book a value far beyond that of a mere textbook. The two volumes, which could well be combined to form a single handbook, fill a long-felt need in German technical literature . . . List of references at the end of each chapter, an overall bibliography, an annex containing aerodynamic parameters, a list of personalities and a subject index complete the work." *P. R.*

Severy, Merle, ed.

Wild animals of North America. 400p. 1960. National Geographic Soc., Washington, D. C., $7.75.

Animal kingdom, Nov.-Dec. 1960, p.214. 9 l.

"Prodigiously illustrated (with so many color plates that the black-and-white photographs come almost as a relief) and written in the anecdotal but informative style of the *National Geographic,* this latest in the magazine's book series matches the high standards of the others. Five paintings by Rungius are reproduced from the New York Zoological Society's collection."

Shaw, Walter F. B., ed.

Domestic heating. 178p. 1960. Temple Press, London, 21s.

Fuel efficiency, Dec. 1960, p.55. ⅜ col.

"Sets out to describe and assess the various forms of space and water heating, in terms appreciated by the layman. For guidance on the choice of appliance, certain chapters . . . will prove invaluable. Probably the chapter that will be most popular is that on the choice of fuels, as this compares the cost and convenience of each type of fuel in a perfectly unbiased way . . . There are four chapters each dealing with domestic heating by each of the four fuels, coal, oil, gas and electricity . . . Other chapters . . . deal with the selection of a heating system, insulation and ventilation, comfort and safety, central heating systems and selection of the appliance . . . Good value for those who want to have something more than a vague knowledge of providing the right conditions at the most economic price in their own particular environment."

Heating, Dec. 1960, p.437. ⅝ col.

"Compiled with the aid of several experts in specialised fields, this book has been written for the intelligent layman who desires to acquire a background knowledge of the subject sufficient to enable him, or her, to get the best available domestic heating system suited to his circumstances. Those who succeed in mastering the contents should be in a strong position to obtain value for money in the installation as well as the performance of their equipment . . . Will surely fill a definite need."

Shepherd, R., & **Withers,** A. G.

Mechanised cutting and loading of coal. 328p. Odhams, London, 50s.

Colliery guardian, Dec. 8, 1960, p.675. ⅛ col.

"This survey of coal getting and loading machines, assembles constructional and operational details of most modern machines, both English and foreign and ancillary equipment. They are classified and analysed so that it is possible to appraise current developments and many of the problems of coalface mechanisation. Other associated aspects are covered authoritatively and with the illustrations, sketches and tables, this book is at once a text-book and a handbook of reference for anyone wishing to study the subject as well as practising engineers."

Iron & coal trades review, Dec. 9, 1960, p.1270. ⅜ col.

"A very comprehensive survey of coal-cutting and loading machines. Unlike some textbooks dealing largely with discussions of machines . . . [this book] does not read like a manufacturer's catalogue, but does, in fact, present a reasoned exposition of the application and benefits of the various equipment considered. Indeed, the authors devote two chapters to the all-important problem of choosing the right machine for the job in hand, including a discussion of design and operational problems . . . Bears the stamp of freshness and may be regarded as very desirable, if not essential, reading for mining engineers and students alike."

Skellon, J. H.

Concise scheme of volumetric analysis. 58p. 1960. Pitman, London, 6s. 6d.

Chemical age, Dec. 24, 1960, p.1055. ⅛ col.

"Aims at aiding candidates preparing for practical examinations in chemistry at the G.C.E. advanced level . . . Includes the usual experiments which are likely to occur in such examinations and the candidate who follows it slavishly will score some marks which are frequently lost by inadequate or careless recording. The section on apparatus and techniques is remarkably short, there being no advice on the use of the pipette nor on the production of solutions of accurately known concentration . . . The calculations are effective but the equations used in the section on oxidation-reduction could be replaced by ionic ones with benefit to many of the intended users."

Smith, George.

Introduction to industrial mycology. Ed.5. 399p. 1960. E. Arnold, London, 40s.

Chemistry & industry, Dec. 17, 1960, p.1565. 1⅔ col.

"The present edition has 21 more pages than the last, eight new photographs have been added, one withdrawn and four replaced; also the single index has been divided into author index and subject index . . . The number and excellence of the photomicrographs is an outstanding feature of the work, and doubtless has attracted many to the study of moulds . . . Should be regarded as a *vade-mecum* for chemists and others who encounter problems about moulds . . . The interpolation of new matter is skilfully done and usually only to be noted when the author calls special attention to it." *J. Ramsbottom.*

Journal of the Textile Institute, Nov. 1960, p.P666. ⅔ p.

"Deals with a most complex subject in such a way as to make it understandable to those without special training in biology, and explains all the terms which are likely to be unfamiliar to them . . . Brought up-to-date by the inclusion of a few additional genera and species, and, of the 168 illustrations, eight are new and one old one has been discarded. There are adequate author and subject indexes. The modifications . . . are of more importance to the mycological systematist than to the textile technologist or chemist . . . Mr. Smith is to be congratulated on compressing such a wealth of accurate, interesting, and useful information into a book of a little over 400 pages." *A. O. Lloyd.*

Smith, K. M.

Plant viruses. Ed.2, revised. 209p. 1960. Methuen, London, 16s. 6d. (Methuen monographs in biological subjects.)

Chemistry & industry, Dec. 10, 1960, p.1528. ⅔ col.

"Intended for the student with little or no initial knowledge of viruses . . . Divided into two sections, the first dealing with the basic principles of plant virology, the second with the practical methods employed in studying plant viruses . . . Throughout full reference is made to the relevant literature, and an index is provided. The whole format is pleasing and easy to follow. Overall this expanded edition will prove valuable to any student of plant virology, and to many research workers, presenting, as it does, a comprehensive review of the field in a sympathetic and authoritative way." *J. C. Felton.*

Discovery, Dec. 1960, p.546, 548. ⅞ col.

"The results of thirty years of personal work by the author and also the findings of other workers in the same field . . . Not written for the expert scientist but rather for the agriculturist or small garden enthusiast; it therefore appeals to a very much wider circle of readers . . . The author does not pretend to have said the last word on viruses in this little volume; on the contrary he points out that there is still much that is unknown about the interrelations of plant and virus and that only continued experiment and observation can give the whole story . . . Well-arranged . . . so that quick reference can be made to the practical methods of control." *P. J. Alexander.*

Sorum, C. H.

Introduction to semimicro qualitative analysis. Ed.3. 239p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $3.50.

Analytical chemistry, Jan. 1961, p.62 A. ¼ col.

"This new edition . . . makes use of the procedures which have characterized the previous editions. There have been no major changes in these. However, a new alternative test for antimony has been added and details of many procedures have been modified, thus making the identifications and separations more precise. In Chapter II . . . sections have been expanded to include discussions of pH, indicators, hydrolysis, oxidation potentials, and balancing of oxidation-reduction equation. In addition the discussion of analysis of salts and salt mixtures is consolidated in one chapter to enable the student to follow the analysis more easily."

Steinberg, J. L., & Lequeux, J.

Radioastronomie; les méthodes radioeléctriques au service de l'astrophysique. 294p. 1960. Dunod, Paris, 19 N.F. unbound.

Physics today, Jan. 1961, p.64. ½ col.

"Special attention is given to the technique of instrumentation and the astrophysical interpretation of the observations. Solar, galactic, and extragalactic emissions are treated in detail, whereas planetary radio observations are described but briefly. There are copious illustrations and diagrams, and basic literature listed is up to date. The authors are well in the picture of modern developments, including the maser and optical pumping. They profess to have written the book for the public at large. This, however, is not obvious from its rather technical contents . . . Can be recommended to the competent physicist or astrophysicist as a broadly sketched introduction to radio astronomy." *E. J. Opik.*

Stern, Curt.

Principles of human genetics. Ed.2. 753p. 1960. Freeman, San Francisco, $9.50.

Science, Jan. 27, 1961, p.270. 1⅔ col.

"The first edition of Stern's textbook of human genetics (1949) has become a classic in its field. It has no rival in lucidity, precision, objectivity, and fairness in the presentation of

even highly abstruse matters. All these qualities are fully preserved in this second edition . . . Except in some of the early chapters, much new material has . . . has been added in the chapters retaining their old titles. Altogether, this is not a patch-up job, so often found in new editions . . . but a new and modern text . . . The discussion of eugenics is admirably clear, concise, and as uncontroversial as any I have ever read . . . Can be highly recommended to those wishing to familiarize themselves with human genetics. It has no rivals. It will be widely read." *Theodosius Dobzhansky.*

Stewart, John Lawrence.
Fundamentals of signal theory. 346p. 1960. McGraw, New York, $9.

Electrical journal, Nov. 25, 1960, p.1434. ½ col.

"The treatment, although covering much the same ground as many other works on the subject, is refreshingly different, in that the author places more reliance on basic arguments and links his mathematical models with physical principles. Specialised jargon is avoided and numerous problems illustrate the theory rather than provide exercises in calculation. Senior and graduate students in most of the physical sciences as well as other branches of engineering will appreciate this book."

Stong, C. L.
Scientific American book of projects for the amateur scientist. 584p. 1960. Simon, New York, $5.95.

Animal kingdom, Nov.-Dec. 1960, p.214. ⅛ col.

"A book of 'experiments and constructions, challenges and diversions' in Astronomy, Archaeology, Biology, Natural Sciences, Earth Sciences, Mathematical Machines, Aerodynamics, Optics, Heat and Electronics, reprinted and enlarged from the practical monthly section in *Scientific American.* Under 'Natural Sciences' there are chapters on Walker Van Riper's work with hummingbirds, on raising moths and butterflies as experimental animals, on bird-banding and on keeping reptiles and amphibians."

Stout, Evelyn E.
Introduction to textiles. 363p. 1960. Wiley, New York, $6.50.

Chemical & engineering news, Dec. 26, 1960, p.48. ⅛ col.

"To present a thorough yet up-to-the-minute 'Introduction to Textiles' in just 363 pages is a formidable task, but the present book . . . accomplishes it skillfully . . . The major portion . . . is a discussion of the properties, processes of manufacture, and uses of about 90 important natural and man-made fibers . . . Style is highly readable, and the author has managed to pepper the mass of factual material with many interesting historical sidelights . . . Although . . . addressed primarily to students and teachers of home economics, the average chemist who has not specialized in textile or fiber technology will find it a good, well balanced survey of the field." *Anthony M. Schwartz.*

Strauss, Bernard S.
Outline of chemical genetics. 188p. 1960. Saunders, Philadelphia, $5.

Chemical & engineering news, Dec. 19, 1960, p.61. ¾ col.

"Dr. Strauss has succeeded admirably in his attempt to outline most of the current concepts and recent work in the field. The presentation is dogmatic. Although literature references are given to many of the recent and most important contributions in the field, the presentation by no means provides a rigorous stepwise proof of validity of the concepts and conclusions advanced. The sequence in which material is presented is nevertheless logical, and if the reader is willing to assume that the statements made are correct rather than to search for proof which is intentionally omitted, he may acquire rather quickly some familiarity with relevant current concepts." *R. M. Archibald.*

Taenzer, W.
Stahlmaste für Starkstrom; Freileitnuben Berechnung und Beispiele. Ed.2, revised by K. Fielitz and H. Mors. 164p. Springer, Berlin, DM 45.

Electrical journal, Dec. 23, 1960, p.1695. 1 col.

"The new revision of the V.D.E. Regulations governing the construction of heavy current overhead lines, and which appears in V.D.E. 0210/2.58, made the latest and revised edition . . . necessary . . . Comprehensive and should prove valuable and constructive to engineers engaged on the design and production of steel towers . . . Perusal of the work should also prove most interesting to those engineers who are engaged on the erection of such steel tower lines." *D. F. W. J.*

Thaler, George J., & **Brown,** R. G.
Analysis and design of feedback control systems. Ed.2. 648p. 1960. McGraw, New York, $14.50.

Midwest engineer, Dec. 1960, p.18. ¾ col.

"Formerly entitled *Servomechanism Analysis,* this text has been completely rewritten to bring both the presentation and the material up to date . . . Intended . . . for a first course in feedback control theory at either the senior level or at early postgraduate level . . . Numerous components of automatic-control systems are discussed in detail showing the relative merits and advances of each system. The mathematical equations that apply are explored and methods and analysis of design are thoroughly eluciated. Helpful features that have emanated from feedback control research are also incorporated." *W. L. R.*

Thorn, Roland Berkeley.
Design of sea defence works. 106p. 1960. Butterworth & Co., London, 25s.

New scientist, Dec. 15, 1960, p.1611. ¾ col.

"Written as a practical handbook for those concerned with the design of sea defences, and in this it succeeds admirably. There has been a need . . . for an up-to-date account of the methods used in the design and construction of sea walls, for a book which would fulfil the same function in this country as the Beach Erosion Board's 'Shore Protection, Planning and Design' does in the United States. Mr. Thorn's book is very much shorter . . . and much less comprehensive than the American work, but it summarizes adequately the best design practice in this country. Many examples are given, mostly of sea defence works on the

coast of Kent with which the author has been principally concerned." *W. J. Reid.*

Tipton, C. R., jr., ed.
Reactor handbook. Ed.2. v.1: Materials. 1224p. 1960. Interscience Publishers, New York, $36.50.

ASTM bulletin, Dec. 1960, p.84. ⅔ col.

"A replacement for *General Properties of Materials, Volume III, The Reactor Handbook* which was published by the Atomic Energy Commission in 1955. Treatment of nearly all topics has been expanded and brought up to date, and many new topics have been added . . . Coverage has been extended to include liquids and gases as well as solids . . . Information on irradiation behavior . . . is now included . . . Approximately 130 reactor scientists and engineers have contributed their writing efforts. In contrast to the earlier work in which the policy was to minimize referencing, this book is extensively referenced to make it more useful." *J. W. Caum.*

Vanstone, Ernest, & **Dougall,** B. M.
Principles of dairy science. 238p. 1960. Cleaver-Hume, London, 25s.

Chemistry & industry, Dec. 3, 1960, p.1503. ⅔ col.

"There is certainly a need for a book dealing with general dairy science, but it is doubtful whether this one fulfils the need. The authors have attempted to cover too much in one volume. It is hardly possible to write a text-book for dairy students, a laboratory manual for workers in the dairy industry, and a reference book for dairy farmers within the scope of 238 pages. In any such attempt it is essential to select the subject matter carefully and to avoid elaboration. This the authors have failed to do . . . Abounds in mistakes, many of which may be printers' errors but are none the less misleading . . . A disappointing book." *F. E. Murphy.*

Food processing & packaging, Dec. 1960, p.477. ¾ col.

"Only two of the 21 chapters are of any value to farmers, with virtually no reference to the important bacteriological aspects of milk production. In fact the bacteriological treatment throughout is inadequate. Unfortunately the book contains numerous errors and misleading statements . . . Since the authors invite comment and criticism, one hopes, if a further edition is contemplated, that a careful revision will be made and that a better balance will be achieved between chemistry and bacteriology in order to justify its present title. As it stands, this book cannot be recommended, particularly for students." *R. C. Wright.*

Journal of the Royal Institute of Chemistry, Dec. 1960, p.429. ⅝ col.

"The authors are both teachers of great experience at Agricultural College level and it was to be anticipated that they would produce a textbook which is, in the main, admirably suited to their students. Although the student working for a degree in agriculture may find its uses more limited, it does contain a good deal of information not very easily obtained from the sources normally available to him . . . Well presented, most readable and very moderately priced." *B. Thomas.*

Vassiliev, M. See **Gouschev,** Sergei, & **Vassiliev, M.,** ed.

Voous, Karee Hendrick.
Atlas of European birds; translated from the Dutch by K. H. Voous. 284p. 1960. Nelson, New York, $15.

Nature, Dec. 31, 1960, p.1139. ⅞ col.

"The author's text is clear, concise and sound. He has in each case detailed the geographical range and habitat, and wherever these present problems of biological interest he has discussed them, so that the book is both a reliable summary of the known and a valuable guide to questions of zoo-geography and species-formation that would profitably repay further research." *D. Lack.*

Science, Jan. 13, 1961, p.96. 1⅛ col.

"A volume of maps, one for each of the 419 species of European birds breeding west of the Ural Mountains. Each map is accompanied by a closely written statement that includes the ancestral or inferred faunal placement of the species . . . The maps, which are pseudo-Mercator projections, have the breeding range of each species marked in red. Most of the maps extend from the equator to the North Pole . . . The photographs, illustrating 355 of the 419 species, are excellent 'shots' from life, which show as much as single pictures can of the habits of each bird." *Herbert Friedmann.*

Vuylsteke, Arthur A.
Elements of maser theory. 362p. 1960. Van Nostrand, Princeton, N. J., $9.50.

Product engineering, Jan. 2, 1961, p.59. ⅛ col.

"The theory of maser operation covered represents an instructive application of the quantum theory, statistical mechanics and the interplay between the two. Fundamentals and applications are discussed at length. Although extensively mathematical, the book is also self-contained, and includes all of the concepts and mathematical apparatus necessary to an understanding of the basic subject matter. Covered are Bohr quantum theory, statistical mechanics, quantum mechanics and radiation theory."

Waid, J. S. See **Parkinson,** D., & **Waid,** J. S., ed.

Watson, Stephen J., & **Nash,** M. J.
Conservation of grass and forage crops. Ed.2, enlarged. 758p. 1960. Oliver, Edinburgh, 84s.

Chemistry & industry, Dec. 3, 1960, p.1500. 1⅝ col.

"An event to be welcomed by scientific workers and farmers alike. Although it is a bulky tome, the material in it is so simply and logically arranged that it is easy to find any information required and, for the specialist, there is a bibliography providing references to no less than 2000 published papers. Following a short introduction, the book falls into three main parts: natural and artificial drying processes, ensilage and the utilisation of dried and ensiled crops . . . Invaluable to scientific workers and agricultural advisers and . . . equally important to the farmer." *W. G. Ogg.*

Nature, Jan. 7, 1961, p.4. 1 col.

"An authoritative compilation of a massive amount of experimental and practical evidence from all over the world. As such it is bound to be accepted as a book of reference and is

likely to remain a classic for a very long time to come . . . Well produced and well edited. The subject index is reasonably adequate and there is a most valuable index of authors . . . A book of reference which should find a place in every library as well as on the private bookshelf of all those interested in feeding farm animals." *William Davies.*

West, John C.

Analytical techniques for non-linear control systems. 223p. 1960. English Universities Press, London, 25s.

Process control and automation, Dec. 1960, p.656. ⅝ col.

"Exclusively concerned with amplitude non-linearities and a minimum of linear servo-mechanism theory is used; feedback round a non-linear amplifier is introduced in the second chapter. The phase-plane method, for studying natural transient behaviour of systems both analytically and practically in the laboratory, is dealt with at length . . . The next four chapters are concerned with harmonic analysis and the application of the describing function technique to stability studies . . . The remainder . . . deals with the use of randomly varying signals as input test signals and the statistical tools of probability theory necessary to evaluate performance."

Wheland, G. W.

Advanced organic chemistry. Ed.3. 871p. 1960. Wiley, New York, $17.50.

Journal of the American Oil Chemists' Association, Dec. 1960, p.37. ⅓ col.

"The important changes . . . are the addition of discussions on electronic and nuclear magnetic resonance, conformational analysis, inclusion and charge transfer compounds, and the Hammett *rho-sigma* relationships. Greater emphasis has been placed on mechanisms and reaction kinetics, and general acid or base catalysis. The molecular orbital discussion is too brief and superficial to be useful however. The author has a clear, readable style, which makes some of the abstruse concepts sound quite simple." *Daniel Swern.*

Science, Dec. 30, 1960, p.1933. ¼ col.

"Contains new material considered by most instructors to be necessary for the study of organic chemistry at the graduate level . . . The text is improved by the additions, but the brief treatments accorded the topics here could hardly give the student any proficiency with concepts and techniques considered by many to be assential for understanding current developments in the theory and practice of organic chemistry." *Richard H. Eastman.*

Whitmer, Melvin.

Experiments in industrial electronics. 94p. 1960. Sams, Indianapolis, $1.95 unbound.

Popular electronics, Jan. 1961, p.28. ⅝ col.

"Experience in entertainment phases of electronics is not enough to allow someone to step into the field of industrial electronics servicing—he needs actual bench experience on industrial equipment. This book is intended to provide such experience through the construction of several projects representative of industrial gear. Diagrams and step-by-step instructions are included for building a photoelectric alarm, an r.f. heating system, an electronic timer, a proximity detector, etc. For those not interested in a career in this field, the book can serve as a source of unusual projects."

Wilbur, J. B., & Norris, C.

Elementary structural analysis. Ed.2. 651p. 1960. McGraw, New York, $10.50.

Iron and steel engineer, Dec. 1960, p.277. ⅛ col.

"The general format, pilosophy and method of presentation of the first edition have been retained. The entire text, however, has been reworked and improved. Major changes have been introduced to comply with structural engineering developments and achievements. More efficient utilization of steel, concrete, and wood, as well as the expanded use of structural aluminum, are amplified . . . Several chapters have been completely rewritten or amplified, while others have been integrated with allied topics."

Structural engineer, Jan. 1961, p.31. ⅝ col.

"The general format and method of presentation of this book, which deals comprehensively with the basic theory of structural analysis, have been retained . . . A foreword has been added which gives an historical review of structural engineering . . . and a survey of the position at the present day. Another new chapter deals with the plastic behaviour of structures, and . . . an important new chapter on matrix methods of structural analysis has been included . . . Several chapters appearing in the first edition have been rewritten and amplified and the sections on miscellaneous structures . . . have been omitted from the second edition."

Winckel, F., ed.

Technik der Magnetspeicher. 614p. 1960. Springer, Berlin, DM 72.

Electronic engineering, Jan. 1961, p.51. ⅝ col.

"This volume is . . . very welcome, as it gives a comprehensive survey of recent developments and of the techniques used in the various magnetic storage devices at present in operation . . . The main subject matter is interspersed with a number of discussions of associated topics such as, for example, rendering magnetic recordings visible and studio techniques. The fields covered are therefore very diverse in nature and there are few aspects indeed of magnetic storage which do not come under consideration . . . Would doubtless be of great interest to students although the book is directed principally at the practicing engineer." *A. S. Hay.*